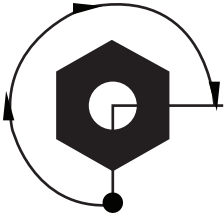
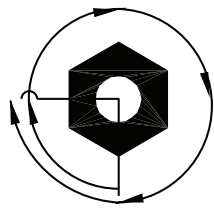


INSTALLATION INSTRUCTIONS

CBC-LOK®/CS-LOK® INSTALLATION INSTRUCTIONS

CBC-Lok®/CS-Lok® Tube Fittings come completely assembled & ready for use, no disassembly required. Although there are some general guidelines to follow, no special preparation of the tubing is necessary. In overhead applications, Tylok recommends using a Pre-Set Tool.

Size	Tighen # Turn(s)	
1 1/16"	3/4"	<p>SIZE #1 thru #3</p>  <p>Finger tight plus 3/4 turn</p>
2 1/8"		
3 3/16"		
4 1/4"	1-1/4"	<p>SIZE #4 thru #16</p>  <p>Finger tight plus 1-1/4 turn</p>
5 5/16"		
6 3/8"		
8 1/2"		
10 5/8"		
12 3/4"		
14 7/8"		
16 1"		

NOTE: DF Plugs, -NF (Nut & Ferrule Pre-Assemblies) require only 1/4 turn make-up.



Simply insert the tubing into the assembly, making sure the tubing seats firmly against the shoulder of the body and the nut is finger tight. High pressure applications and high safety-factor systems. Further tighten the nut until the tube will not turn by hand or move axially in the fitting.



Tighten nut with wrench the additional number of turns indicated above, while holding the fitting body with a second wrench.



TO REMOVE TUBE & RE-CONNECT TUBE FITTING

Mark the location of the nut with reference to the body before disassembly. Back off the nut until it is clear of the body and remove the tubing from the fitting. For assembly, re-insert the tubing into the body until it is seated. With proper size wrench, re-tighten nut to original location by realigning previous marks. A noticeable amount of torque will develop when the nut is turned to original position. Next, rotate the nut slightly past original position to fully re-set the seal.

TUBING SELECTION GUIDELINES

General

- Free of nicks, scratches, and imperfections
- Suitable for bending and flaring
- Square cut ends

Stainless Steel

- Types 304, 304L, 316, 316L, 317, or 317L per ASTM A213, ASTM A269, or equivalent.
- Fully Annealed, Seamless or Welded Redrawn, Maximum hardness of 80 HRB.

Copper

- Seamless ASTM B75 Soft Annealed, ASTM B88 K or L Temper O, or equivalent.

Carbon Steel

- ASTM A179 or equivalent, maximum hardness of 72 HRB.

GAS SERVICE

Gases are generally less viscous than liquids allowing them to leak through imperfect seals. Tylok recommends tubing with minimal surface imperfections (nicks, scratches, etc.) and heavier walls for gas service applications. Heavy wall tubing offers more resistance to ferrules during installation which promotes a skiving effect that smooths out surface defects that would otherwise be leak paths. Thin wall tubing offers less resistance which promotes flexing rather than skiving resulting in a seal that may not be suitable for gas service. Refer to tubing pressure tables in this catalog for wall thickness recommended for gas services.

PRECAUTIONS FOR WELD END

For best results when using Tylok tube fittings with weld ends, certain precautions should be taken:

- Remove the nut & ferrules from the fitting.
- Protect exposed threads & sealing surfaces from spatter.
- Use a heat sink to dissipate heat.
- Tack weld symmetrically to maintain alignment.
- When finishing welding remove weld spatter protection and make sure nuts and ferrules are in the proper orientation before assembling.

SAFETY GUIDELINES

- Depressurize fluid systems before connecting, disconnecting or remaking a fitting.
- Follow Tylok's guidelines for proper fitting installation.
- Consult the factory before attempting to interchange Tylok fitting components.
- Don't exceed the recommended pressure ratings of system components.
- Use thread sealants when installing tapered pipe threads.
- Select fitting and tubing materials for best results.
- Never use a fitting to bleed pressure from a system.

HEAT TRACEABILITY

Tylok Tube Fittings are heat code traceable back to mill heat of the material they were made from. Contact the factory for material certification requests.

RAW MATERIAL SPECIFICATIONS

Fitting Material	Bar Stock	Forging
Brass	ASTM B16 ASTM B453	ASTM B283
Stainless Steel	ASTM A276 ASTM A479 ASME SA-479 Type 316-SS	ASTM A182 ASME SA-182 Type 316-SS
Steel	ASTM A108	

* Reference Tubing Selection & Preparation

NOTICE

In designing a system incorporating tube fittings and valves, it is the designer's or user's obligation & responsibility to determine the appropriate fittings and valves to be used for each application and to insure proper installation and maintenance.

QUALITY CONTROL

All components are manufactured & inspected to meet strict quality control standards in each phase of production. All employees are thoroughly trained to follow procedures, in accordance with the ISO 9001 Quality Standard, to ensure a quality product from the start of each job through completion.

End Connections

Suggested Allowable Working Pressure Tables



CBC-LOK/CS-LOK TUBE ADAPTERS

Size	Tube Size	Fractional (PSIG)		Metric (BAR)	
		Stainless Steel & Carbon Steel	Brass	Tube Size	Stainless Steel & Carbon Steel
1	1/16	7200	2600	3mm	370
2	1/8	6400	3200	6mm	390
3	3/16	6000	3000	8mm	390
4	1/4	5900	2900	10mm	390
5	5/16	5800	2700	12mm	360
6	3/8	5800	2200	15mm	340
8	1/2	4900	2100	16mm	340
10	5/8	5000	1900	18mm	310
12	3/4	4600	1800	20mm	310
14	7/8	4300	1500	22mm	340
16	1	4100	1500	25mm	280
20	1-1/4	4900	-		
24	1-1/2	4900	-		
32	2	3600	-		

NOTE: Ratings calculated in accordance with ASME B31.3 (stress values of 10,000 psi for brass and 20,000 psi for stainless and carbon steel).



STB FITTINGS (PSIG)

Stainless Steel & Carbon Steel			
Size	Thread	Straights	Positionable
2	5/16-24	5076	5076
3	3/8-24	5076	5076
4	7/16-20	5076	4568
5	1/2-20	5076	4568
6	9/16-18	5076	4061
8	3/4-16	4568	4061
10	7/8-14	3626	3045
12	1-1/16-12	3626	3045
14	1-3/16-12	3045	2538
16	1-5/16-12	3045	2538
20	1-5/8-12	2538	2030
24	1-7/8-12	2538	2030
32	2-1/2-12	2030	1522

NOTE: Pressure ratings per SAE J1926-3 for light-duty stud ends.



JIC 37° FLARE (PSIG)

Stainless Steel & Carbon Steel		
Size	Thread	PSIG
2	5/16-24	5000
3	3/8-24	5000
4	7/16-20	5000
5	1/2-20	5000
6	9/16-18	5000
8	3/4-16	4500
10	7/8-14	3500
12	1-1/16-12	3500
14	1-3/16-12	3000
16	1-5/16-12	3000
20	1-5/8-12	2500
24	1-7/8-12	2000
32	2-1/2-12	1500

NOTE: Pressure ratings per SAE J514.



NPT & BSPT PIPE THREADS

Size	Thread	PSIG			
		Stainless Steel & Carbon Steel		Brass	
		Male	Female	Male	Female
1	1/16	11000	6700	5500	3300
2	1/8	10000	6500	5000	3200
4	1/4	8000	6600	4000	3300
6	3/8	7800	5300	3900	2600
8	1/2	7700	4900	3800	2400
12	3/4	7300	4600	3600	2300
16	1	5300	4400	2600	2200
20	1-1/4	6000	5000	3000	2500
24	1-1/2	5000	4600	2500	2300
32	2	3900	3900	1900	1900

NOTE: Pressure ratings calculated in accordance with ASME B31.3 with NPT threads per ASME B1.20.1 and BSPT threads per ISO 7-1.

THERMOCOUPLE BORE THROUGH

Sizes	De-Rating Factor
1/2" & Smaller	0.75
Over 1/2" up to & including 3/4"	0.50
Larger than 3/4"	0.25

NOTE: Multiply tube pressure rating (see Suggested Allowable Working Pressure tables) by de-rating factor to determine safe working pressure.

FITTING TEMPERATURE RATINGS

316 Stainless	Brass	Steel
-325°F to 1000°F (-198°C to 648°C)	-40°F to 400°F (-40°C to 204°C)	-65°F to 375°F (-54°C to 190°C)